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Dated 12 August 1999

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The Patent Office

**1/77**

## Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office  
Cardiff Road  
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Gwent NP9 1RH

1. Your reference	80.68691		
2. Patent application number (The Patent Office will fill in this)	<b>9816944.4</b>		
3. Full name, address and postcode of the or of each applicant (underline all surnames)	Dynex Technologies (Guernsey) Ltd. Rue du Commerce, St. Peter Port Guernsey, Channel Islands GY1 2HX		
Patents ADP number (if you know it) <i>7438570001</i>			
If the applicant is a corporate body, give country/state of incorporation			
4. Title of the invention	Microplate analyser		
5. Name of your agent (if you have one)	Frank B. Dehn & Co.		
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode) 179 Queen Victoria Street London EC4V 4EL			
Patents ADP number (if you know it) 166001			
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application		Date of filing (day / month / year)
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if: a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body. See note (d))	Yes		

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

2

Claim(s)

(P)

Abstract

Drawing(s)

1 ~~+~~ 1

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right  
to grant of a patent (Patents Form 7/77)

Request for preliminary examination  
and search (Patents Form 9/77)

Request for substantive examination  
(Patents Form 10/77)

Any other documents  
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date 4 August 1998

12. Name and daytime telephone number of  
person to contact in the United Kingdom

K.J. Tomlinson  
01273 244200

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#### Notes

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- b) Write your answers in capital letters using black ink or you may type them.
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- d) If you have answered 'Yes', Patents Form 7/77 will need to be filed.
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Microplate Analyser

5 Microplate analysers are used in automated immunoassays and typically carry out automatically the sample distribution, incubation, reagent addition, washing and detection phases of immunoassays in clinical laboratories, for in-vitro diagnostic assays and other research and industrial applications.

10 Automated microplate analysers traditionally require two separate mechanisms to transport microplates between process stages (incubation, washing etc.) and dispense samples and reagents into microplates.

15 According to the invention, we provide a microplate analyser having a movable carriage carrying a pipette mechanism for dispensing fluids, and also having a mechanism allowing the carriage to pick up a microplate.

20 The latter mechanism may be any suitable clamp, engagement member or latch capable of reliably engaging, lifting and carrying a microplate. Preferably a clamp mechanism is employed.

25 Our invention allows the pipette carriage to pick up microplates, thereby saving the cost of an additional motion system.

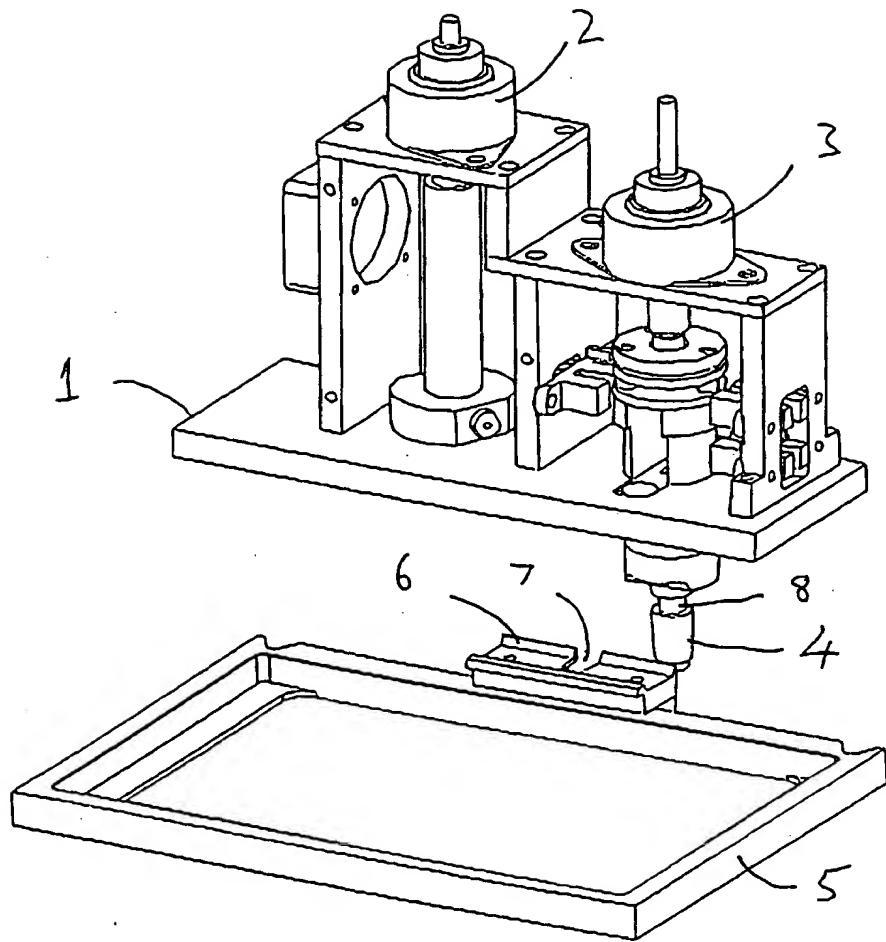
An example of the invention is shown in the drawing. A  
30 pipette carriage 1 movable by suitable drives (not shown) in x, y and z directions carries a first linear actuator 2 for driving a syringe and a second linear actuator 3 for carrying a disposable dispensing tip on a conical support 4.

35 A frame 5 for carrying a microplate is provided with a mounting mechanism 6 by means of which the frame and

microplate can be picked up. In this embodiment a slot 7 is formed in the mounting mechanism and a reduced-diameter portion 8 can enter the slot and grip the mounting mechanism against the top of the conical support 4 on retraction of the second linear actuator.

In use, the carriage 1 can be used to move around a plate of samples as described. In addition, the carriage can move to a supply of disposable tips, pick up a tip by lowering the conical support 4 into a tip, and dispense and aspirate fluids through the tip by operating the syringe 2 (which is connected by a pipe (not shown) to an axial passage through the interior of the second actuator 3). Additionally, the second actuator 3 can be positioned over a tip waste container, and by more fully retracting the actuator the tip can be knocked off the support 4 to fall into the waste container.

If desired, only a single actuator could be used for the three functions of syringing, plate clamping and tip ejection, but at the expense of an additional dead volume in the syringe pump.



PCT/SB91/2425

Frank B. Dehn

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